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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/670,062 | 09/24/2003 | Ryan Samuel Buchert | I-2-0344.1US | 5120 |

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PHILADELPHIA, PA 19103

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| EXAMINER |
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MAI, TAN V

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| ART UNIT | PAPER NUMBER |
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2193

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 04/30/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/670,062

Applicant(s)

BUCHERT ET AL.

Examiner

Tan V. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12 and 19-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12 and 19-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/12/04, 16/16/05, 3/20/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Claims 1-10, 12 and 19-28 are representing for examination.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims recite a method for performing a mathematical function.

"[t]o satisfy section 101 requirements, the claim must be for a practical application of the Sec. 101 judicial exception, which can be identified in various ways:

- . The claimed invention "transforms" an article or physical object to a different state or thing.
- . The claimed invention otherwise produces a useful, concrete and tangible result,..."

See "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" OG Date: 22 November 2005.

Since there is no physical transform to establish a practical application, a useful, concrete and tangible result appears to be lacking. Therefore, claims 23-28 are directed to a non-statutory process.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4-9 and 23-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gatherer et al (Applicants' admission of Prior Art).

As per independent claim 1, Gatherer et al teach, e.g., see Figs. 1 and 6-11, the claimed invention. The **reconfigurable co-processor** comprises: (1) input formatter (160) includes a shifter (Fig. 7, element 221) and the claimed "processor" (Fig. 10 or 11) having adder tree. It is noted that the shifter (221) has the claimed "shifter register configured with a selectable initial position" because it selects only 128 bits of its 256 input bits (e.g., see col. 12, lines 13-14).

As per dependent claim 2, Gatherer et al do show the claimed feature, e.g., see col. 12, lines 13-14 "Shifter 221 shifts and selects only 128 bits of its 256 input bits". It implies the shifter includes the claimed "multiplexer" feature.

As per dependent claim 4, the claim adds "processor ...includes both real and imaginary components". Gatherer et al do show the claimed feature, e.g., see col. 2, lines 35-38 "...basic hardware to be configured for real and complex finite impulse response (FIR) filters, fast Fourier transforms (FFT) and coefficient updates" and Fig. 11.

Due to the similarity of claim 5 to claim 1, it is rejected under a similar rationale. It is noted that Gatherer et al 's device is a **reconfigurable co-processor** which can perform different types of calculations, e.g., see col. 2, lines 35-38 "... basic hardware to be configured for real and complex finite impulse response (FIR) filters, fast Fourier transforms (FFT) and coefficient updates".

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As per dependent claim 6, Gatherer et al do show the claimed feature, e.g., Fig. 6, MEM B has 128b, data width of adder has 32b.

As per dependent claim 7, Gatherer et al do show the claimed feature, e.g., Fig. 7, element (223) has "SWAP" feature.

As per dependent claim 8, Gatherer et al do show the claimed feature, e.g., MEM B.

As per dependent claim 9, Gatherer et al do show the claimed feature, e.g., Figs. 11-11, element (367).

Due to the similarity of method claims 23-24 to apparatus claim 1-2, they are rejected under a similar rationale

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 10, 12, 19-22 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gatherer et al (Applicants' admission of Prior Art) in view of Wilson '856.

Gatherer et al have been discussed in paragraph No. 4 above.

As per dependent claim 3, the claim adds the "shift register has both serial and parallel inputs". The feature is old and well known in the art for selecting the alternate

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data, e.g., see Wilson, Fig. 8. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Wilson "shift register has both serial and parallel inputs" in Gatherer et al, thereby making the claimed invention, because the proposed device is a calculation unit having an alternate input via shift register as claimed.

As per dependent claims 10 and 12, the claims add the "store configured to store an operational factor for the complex function". The feature is obvious to a person having ordinary skill in the art because Gatherer et al 's is a **reconfigurable co-processor** which can perform finite impulse response (FIR) filters, fast Fourier transforms (FFT) and coefficient updates.

As per dependent claims 19-22, the claims recite a communication device including the calculation as claimed in claim 1 / 5 / 7/ 10. It is obvious to a person having ordinary skill in the art at the time the invention was made to use Gatherer et al's device in a communication device as claimed.

Due to the similarity of method claim 25 to apparatus claim 3, it is rejected under a similar rationale.

Due to the similarity of method claims 26-28 to apparatus claims 4 and 7-8 [in paragraph No. 4 above], they are rejected under a similar rationale.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (571) 272-3726. The examiner can normally be reached on Mon-Wed and Fri. from 9:30am to 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An, can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is:

Official (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.



Tan V. Mai
Primary Examiner